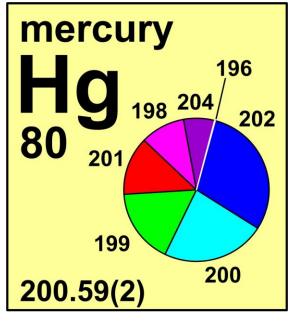
mercury

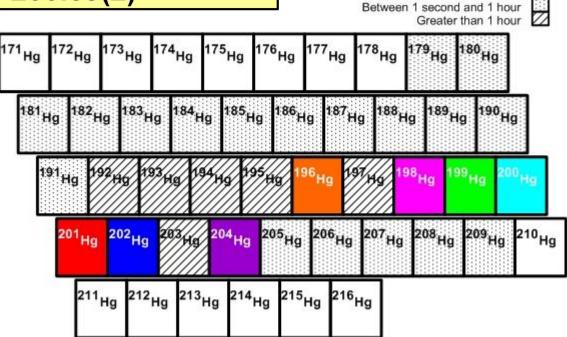


Stable	Atomic mass*	Mole
isotope		fraction
¹⁹⁶ Hg	195.965 833	0.0015
¹⁹⁸ Hg	197.966 769	0.0997
¹⁹⁹ Hg	198.968 2799	0.1687
²⁰⁰ Hg	199.968 326	0.2310
201 Hg	200.970 3023	0.1318
202 L _G	201.970 643	0.2986
²⁰⁴ Hg	203.973 4939	0.0687

^{*} Atomic mass given in unified atomic mass units, u.

Half-life of redioactive isotope

Less than 1 second



Important applications of stable and/or radioactive isotopes

Isotopes in medicine

1) ¹⁹⁷Hg and ²⁰³Hg are radioactive isotopes both used to study brain and kidney function. ¹⁹⁷Hg or ²⁰³Hg is injected into the patient's body and the isotopes travel to these organs giving off gamma radiation that can be detected by instruments positioned above the body. The pattern of radiation given off provides information as to how well these organs are functioning.

Isotopes in industry

1) The isotope ²⁰²Hg can be used to produce radioactive ²⁰³Hg to be used in gamma radiation calibration and medical tests.

Isotopes in the environment

1) ¹⁹⁸Hg, ²⁰⁰Hg and ²⁰²Hg are stable isotopes that can be used in emission and deposition studies of Hg in aquatic and terrestrial ecosystems. For example, different isotopes of mercury are added: to the upland for run-off evaluation, to the lake for direct deposition analysis and to the wetland for outflow contribution analysis to help determine the entry route of mercury to an ecosystem and how these different entry routes can affect Hg accumulation in local fish populations.

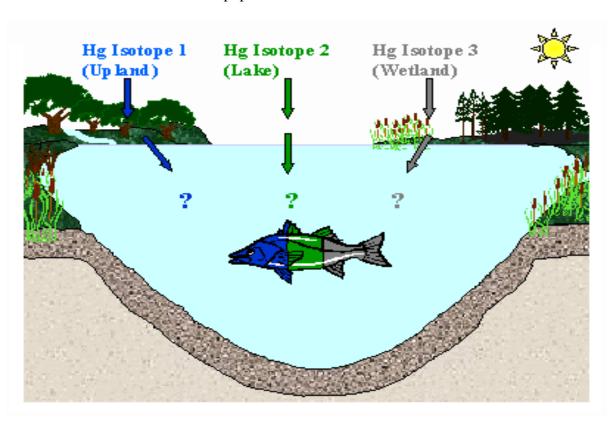


Figure 1: Stable mercury isotopes being used to evaluate direct deposition, upland runoff and wetland outflow contributions to fish mercury levels.